

the length of the whole eye-area. The form of the vulva is very complicated; this organ consists chiefly of a large, broad, almost triangular or heart-shaped, corneous, slightly elevated, uneven blackish area, the base of which is directed forwards; this area shows a longitudinal furrow in the middle, and two other shorter and oblique ones on each side: in front the vulva is limited by a raised margin curved backwards; and in the almost half-moon-shaped space between this margin and the base of the triangular area are two corneous obtuse teeth proceeding from the angles, and directed inwards and forwards. The two examples seen by me are females. In the larger of them the length of the cephalothorax is $6\frac{1}{2}$ millims., its breadth $5\frac{3}{4}$ millims., breadth of forehead (clypeus) 3 millims., height of clypeus $1\frac{2}{3}$ millim.; length of mandibles 3 millims.; first pair of legs 32 millims. (patella + tibia $10\frac{1}{2}$, tibia $8\frac{1}{4}$), second pair 29, third pair 22, fourth pair 24 (patella + tibia $7\frac{3}{4}$, tibia 6) millims.; length of abdomen $11\frac{1}{2}$, breadth $5\frac{1}{4}$ millims.

From Madagascar.

EXPLANATION OF PLATE XXV.

- Fig. 1. *Nephila labillardieri* ♀, p. 130. Cephalothorax and abdomen, seen from above.
 2. *Nephila labillardieri* ♀, var. β.
 3. *Epeira cupidinea* ♀, p. 135.
 4. *Lathrodictus geometricus* ♀, p. 138. Abdomen, seen in profile.

6. Descriptions of some supposed new Species of Birds from the Fiji Islands. By E. L. LAYARD, F.Z.S., H.B.M.C. administering the Government.

[Received February 24, 1875.]

1. LALAGE NIGROGULARIS, sp. nov.

General colour above brown, below cinereous; top of head cinereous; each feather having a pale edge, presents a slightly scaled appearance; wing-feathers brown, inner webs darkest, outer webs slightly tinged with greenish yellow on the outer edge; tail-feathers in strong light closely barred; covering the nostrils is a patch of black extending into a broadish eyebrow: this coalesces with the black of the throat behind the ear, which is covered by a large white patch; above the black eyebrow a faint whitish streak; chin and upper portion of throat black, this separated from the cinereous of the underparts by a broken, irregular, white band; vent and under tail-coverts whitish, tinged with isabella colour; underside of wing- and tail-feathers paler than the upper, the latter much paler at the tips; upper edge of the wing inside deep black; axillaries whitish; bill and legs blue, changing into black after death; iris brown. Length 8", wing 4" 1"', tail 3" 9"', tarsi 1" 1"', bill 1" 2"/>.

This description is taken from a male in full breeding-plumage, testes well developed, shot on the 16th of November, on the hills at the back of Levuka. The natives to whom it was shown did not know

it, and had no name for it. Another, probably the female, was in company with it; but before the gun could be recharged it made off. Its stomach contained insects, which its strong hooked bill eminently fits it to capture and tear in pieces. Its resemblance in this respect is so Shrike-like that Mr. Kleinsmidt, a gentleman whose name is well known in connexion with Fijian zoology, exclaimed, at the first glance, "It is a Shrike."

I have no description of the genus *Lalage*, and therefore place it therein with some hesitation; but I know not where else it can be located, and its general appearance seems to tally with the form of *L. banksiana*, figured in Brenchley's 'Cruise of the Curaçoa.'

2. TATARE? VIRIDIS, sp. nov.

Male. General colour throughout uniform olive-green, tinged with yellow; inner webs of primaries very dark green, outer webs golden green; shafts of wing- and tail-feathers black above, pale yellow below; underside of wing pale buff; plumage somewhat lax; tail-feathers pointed; first quill of wing half the length of third, second quill much shorter than the third, which is shorter than the fourth; fourth, fifth, and sixth equal; seventh and others succeeding graduated. Bill and legs light orange, the former much curved, the latter strong, broadly scutellated in front, none behind. Length 10"; wing 5" 2"; bill 1" 10"; tarsi 1" 6". Claws dark horn-colour, much curved.

This singular bird, of which the native name is *Toti*, was procured in the mountain-regions of Taviuni, one of the Fiji Islands, by Lieut. Liardet, late of H.M. Navy. He describes it as "*creeping*" about the trunks of trees. Another was in company, but escaped. Iris deep red; tongue long, brushed at the tip.

3. PACHYCEPHALA TORQUATA, sp. nov.

Male. Back, wings, and tail very dark, almost black, shaded with green on the outer edges of all the wing-feathers and back; tip of tail pale; head above black; all the underparts of body and flexure of wing bright orange; the gorget crossed by a broadish crescent-shaped black collar; at the back of the neck or nape an indistinct (specimen badly preserved) orange collar; underside of wings and tail lighter than above, the inner edges of the secondaries buff; tip of tail pale; bill black; legs horn-brown. Length (circa) 7"; wing 3" 10"; tail 3"; tarsi 1"; bill 1 1/2".

Female. Red-brown above, much paler beneath; chin rufous; edges of wing-feathers and vent rufous.

Shot in the mountains of Taviuni by Lieut. Liardet. Described as very quick in its motions and restless, always on the move. Its native name is *Kula-oso*. *P. vitiensis* is similar in its habits.

4. PACHYCEPHALA MACRORHYNCHA, sp. nov.

General colour throughout reddish brown, paler on the underside, palest on the chin, reddest about the rump; tip of tail pale; bill very large, black; legs bluish. Length (circa) 7"; wing 3" 6"; tail 3"; bill 1" 2"; tarsi 10". Iris dark brown. Sex unknown.

This species was also procured by Lieut. Liardet in the mountains of Taviuni. Native name *Ai-sou*.

5. *CHRYSÆNA VIRIDIS*, sp. nov.

Male. General colour darkish green; head soiled golden yellow without gloss; under tail-coverts bright chrome-yellow; thighs, lower part of belly, and vent French grey; the green of the back and sides of the chest glossed with gold; these feathers have the V-shaped termination as in *Ptilinopus*; and the first primary shows a tendency to narrowing as in that genus. Primaries edged with yellow, secondaries brilliant green; the inner webs of both golden yellow, as is the underside of the flexure and the inside of the wing; underparts less brilliant than the upper, except on the chest, where there is a beautiful green sheen in certain lights; bill blue-black, tip pale livid; legs very dark crimson; iris yellowish. Length 7"; wing 4" 6"; tail 2" 3"; tarsi 10"; bill 10".

Female. Less brilliantly coloured, especially about the head.

I obtained this lovely species at Kandavu on the 8th of August, evidently breeding, the *testes* of the males being enormously developed. It fed on the berries of a species of banian, and appeared to be not very uncommon. One of the naturalists of the 'Challenger,' Dr. von Suhm, obtained several specimens, but wrongly identified it as *C. luteovirens*, which he did not procure. I agreed with him at the time, till I obtained specimens for myself, and, finding it in the full breeding-stage, came to the conclusion that my first impression of it being *C. luteovirens* not in breeding dress must be erroneous. The acquisition of *C. luteovirens* in all stages showed me, beyond a doubt, that it is distinct; I therefore describe it as an addition to the genus *Chrysæna*.

I have been puzzled by the natives identifying the female of this and of *C. luteovirens* with *C. victor* of Gould; but I think I may now affirm, from both native and European testimony, that the female and young male of that species are green, as are those of *C. luteovirens*. *C. victor* is more widely distributed than I at first thought; it has been obtained at Lanthala, Bua, Ngamēa, and Taviuni. The natives call it "*Bulindamu*;" at Kandavu they called *C. viridis* "*Sokulu*;" on Ovalau they designate *C. luteovirens* by the name of "*Buniaco*." The *Carpophagus* and *Columba vitiensis* they call "*Rūbé*" (Rubey), and *Phlegænas stairi* "*Ngilu*"*.

7. On the Form of the Lower Larynx in certain Species of Ducks. By A. H. GARROD, F.Z.S.

[Received March 2, 1875.]

The present communication contains descriptions of the condition of the lower larynx in some rare members of the *Anatidæ*, which are not referred to in the works of either Mr. Eyton or Mr. Yarrell.

* Italian vowels.

1. *SARCIDIORNIS MELANOTA* (Gm.): Selater, Rev. Cat. Vert. p. 241.

To Mr. Eyton, who established the genus to which this peculiar bird belongs, the visceral anatomy was unknown; and I am not aware of any subsequent description of it having been published. A pair were purchased by the Society on the 18th of September, 1867, the female of which died on the 10th of March, and the male on the 18th of October last year; these are the specimens which I have examined. In both sexes the diameter of the trachea diminishes slightly at its lower extremity before it again expands a little to end in the syrinx. As in birds generally, the tracheal rings are complete and notched in the middle line before and behind, in such a way that where they meet the two halves overlap and are overlapped respectively by the rings above and below them. The lower tracheal rings, however, in both sexes are much thinned in front, as is the case in the male of *Harelda glacialis**; they are not ossified together.

In the male *Sarcidiornis melanota* (fig. 1) there are 20 anterior,

Fig. 1.

Fig. 2.

Fig. 3.

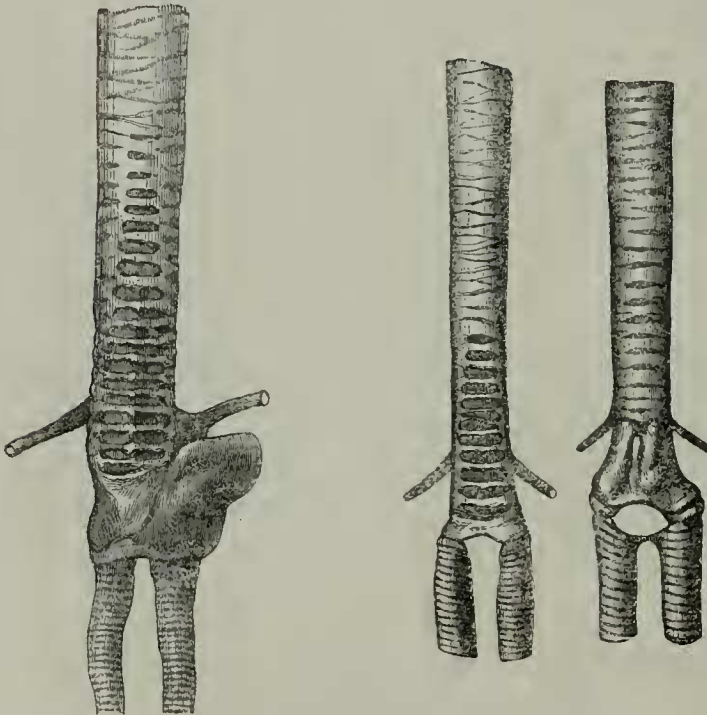


Fig. 1. Lower part of trachea of *Sarcidiornis melanota* ♂.

Fig. 2. Ditto of *Sarcidiornis melanota* ♀.

Fig. 3. Ditto of *Rhodonessa caryophyllacea* ♀.

membrane-covered fenestræ, formed in the intervals between these

* *Vide* figs. Eyton's 'Anatidæ,' plate opposite p. 65; Yarrell's Brit. Birds, vol. iii. p. 261.

thinned rings; in the female (fig. 2) there are only 12 of the same. In the latter there is no lateral diverticulum from the syrinx; but in the former, from the left side, as usual, one is developed, entirely osseous, irregularly compressed, and very small, not having a diameter in any part greater than that of the trachea itself (*vide* figs. 1 & 2).

In the male specimen the cæca are 3 and $2\frac{1}{4}$ inches long; in the female not quite 2 inches. Their diameter is inconsiderable, not exceeding $\frac{1}{6}$ of an inch. The whole intestinal canal measures between $4\frac{1}{2}$ and 5 feet; and the gizzard is decidedly small, not being bigger than that of a common Duck (*Anas boschas*).

2. RHODONESSA CARYOPHYLLACEA (Lath.).

Anas caryophyllacea, Scl. P. Z. S. 1874, p. 110.

This rare Duck is generally placed in the genus *Anas*; by Mr. Eyton, however, it is considered to belong to the *Fuligulinæ*; and that ornithologist puts it, along with *Fuligula rufina*, in the genus *Callichen*. A pair purchased by the Society on the 12th of January last year,

Fig. 4.

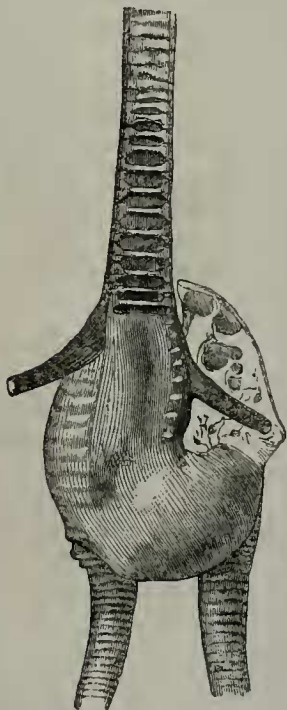


Fig. 5.



Fig. 4. Lower part of trachea of *Rhodonessa caryophyllacea* ♂ (front view).
Fig. 5. Ditto (side view).

died, the female on the 11th and the male on the 15th of March, 1874. From these two specimens I was able to remove the windpipes for examination. The structure of the syrinx of the male is in favour of

the Fuliguline affinities of the genus; and the trachea presents points of superficial similarity to that of the last-described bird, *Sarcidiornis melanota*, as will be seen by a comparison of the accompanying drawings (figs. 1-5) of the lower portion of the windpipes in the two. In the female (fig. 3) there is no lateral diverticulum, the syrinx being simple. The lower end of the trachea is hardly contracted at all. There is, however, a slight thinning of the anterior portions of some of the inferior tracheal rings, as in the female of *Sarcidiornis melanota*, though to a less extent—a small, transverse, anterior fenestra being the result. In the *Rhodonessa* the syrinx proper is nevertheless differently constructed, the last five or six tracheal rings being consolidated together, the fenestration being situated higher up; whilst in the *Sarcidiornis* the fenestration of the unanchylosed rings continues as low down as the bronchial bifurcation (*vide* figs. 3, 4, & 5).

In the male *Rhodonessa caryophyllacea* (figs. 4 & 5) the lower portion of the trachea is less capacious than a little higher up, where a slight fusiform dilatation occurs. Above the large syringeal box there are in front 15 transverse fenestræ formed between the thinned tracheal rings, as in the *Sarcidiornis* and *Harelda*. Below them the syrinx is formed by a considerable dilatation in two directions—one to the left, which is the larger and has semimembranous walls; the other slightly to the right, inferior in position to the former. This latter is simply osseous, no fenestræ being present in it; it intrudes upon the right side as well as the left in front. The last 12 or so tracheal rings are considerably dilated and co-ossified, the two above-mentioned compartments being connected with the cavity formed by their fusion through a single left-sided orifice, the left brouchus springing from the membraniform cavity.

The cæca are not quite equal in size, being $2\frac{1}{8}$ and $1\frac{3}{4}$ inches long; the whole intestine measured 4 feet.

3. METOPIANA PEPOSACA (Vieill.): Slater, Rev. Cat. Vert. p. 255.

Of this bird Mr. Slater mentions* that "it has a large bulbous expansion in the windpipe." This I have found in all the male specimens which I have examined. Its distance above the bifurcation of the bronchi is best estimated from the accompanying sketch (fig. 6, p. 155) which is of the natural size. A similar tracheal dilatation is to be observed in the male of *Melanitta fusca*, that in *Clangula histrionica* being much less considerable. In a male, purchased on the 6th of July, 1870, which died on the 7th of January last, the syringeal box (see figs. 6 & 7) is constructed on the same type as in *Fuligula rufina* and *F. ferina*, being mostly composed of membrane, with an intersecting, oblique, simple osseous bar running across near the upper margin of its outer side. There is also some dilatation of the consolidated rings which go to form the lower portion of the trachea; this is to be observed on both the right and left sides, the box being connected with the latter only. In the female no box is developed. The trachea narrows slightly above the syringeal box.

* P. Z. S. 1868, p. 146.

Fig. 6.

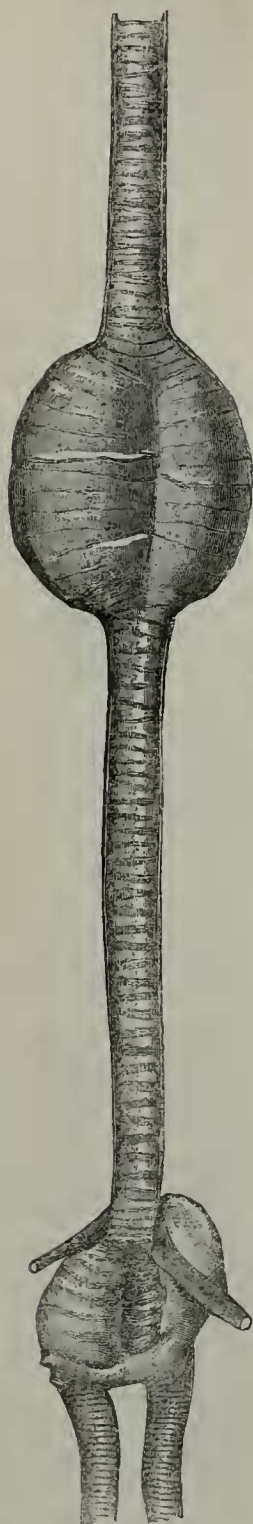
Trachea of *Metopiana peposaca* ♂ (front view).

Fig. 7.



Lower part of trachea of *Metopiana peposaca* ♂ (side view).

The cæca in this specimen were $5\frac{1}{2}$ and 6 inches in length, the whole intestinal canal measuring $4\frac{1}{2}$ feet.

March 16, 1875.

Dr. A. Günther, F.R.S., Vice-President, in the Chair.

The Secretary made the following report on the additions to the Society's Menagerie during February 1875 :—

The total number of registered additions to the Society's Menagerie during the month of February was 146; of which 1 was by birth, 20 were by presentation, 112 by purchase, 6 received in exchange, and 7 received on deposit. The total number of departures during the same period by death and removals was 96.

The most noticeable additions during the month were :—

1. A Peguan Tree-Shrew (*Tupaia peguana*), presented by the Hon. Ashley Eden, C.S.I., Chief Commissioner, Rangoon, British Burmah. This is believed to be the first living *Tupaia* of any species that has reached Europe.

2. A Blanford's Squirrel (*Sciurus blanfordi*), presented by Mrs. Dunn, 8th February. This Squirrel was received in the same cage as the Tree-Shrew, and is so much like it in general external appear-



J. Smit del. & lith

M. & N. Hanhart imp

CHRYSOTIS XANTHOLORA .

ance as almost to lead to the idea that we have here a case of mimetic resemblance on the part of the insectivorous mammal.

3. Four Quica Opossums (*Didelphys quica*), a mother and three young, purchased 12th February. These are the first examples of this species we have as yet received.

4. A yellow-lored Amazon (*Chrysotis xantholora*), purchased 26th February, being the first example of this rare Parrot received alive. Mr. Salvin (Ibis, 1874, p. 327) has lately shown that Yucatan is the true habitat of this species. The only specimens of it in this country are, I believe, those in the British Museum, obtained by Mr. Dyson, upon which Mr. Gray based his description. The accompanying figure (Plate XXVI.) will serve to make this species better known. We have likewise a living example of the nearly allied *Chrysotis albifrons*.

The following communication, addressed to the Secretary by Capt. John Biddulph, dated Government House, Calcutta, Nov. 5, 1874, was read :—

“While we were in Kashgar, numerous specimens of a gigantic wild sheep were brought in from the Thien-Shan range by Colonel Gordon’s party. This was taken by us to be the *O. polii*; and a drawing of the animal by Colonel Gordon was sent to the Society, and published in the ‘Proceedings’ (1874, p. 425, pl. liii.).

“In our trip to Wahhan and back in April and May, numerous specimens of the horns of the *O. polii* were picked up on the Pamir and brought away. Those of our party who had seen the wild sheep alive on the Thien-Shan, pronounced it to be identical with the *O. polii* we saw on the Pamir, though it was remarked by us at the time that the Pamir horns ran larger than the Thien-Shan ones—the latter, on fine full-grown animals, not measuring as a rule over 48 inches from base to tip, measured round the curve, whereas on the Pamir any number of horns averaging from 50 to 60 inches could be picked up; and one head was picked up measuring 65 inches.

“It was not till I arrived in Calcutta that I had an opportunity of seeing the two together, when I was at once struck by the great differences in shape and general appearance.

“After a careful examination of the few specimens available, and the photographed animals of the Thien-Shan, I cannot help coming to the conclusion that they differ sufficiently to warrant the idea that they are distinct animals.

“The accompanying drawings, carefully made to scale, will give a good idea of the two heads.

“The chief characteristic of the *O. polii* head is the bold and elegant sweep of the horns, of which the tips diverge so much in the second curve as to be 48 and 50 inches apart in heads of an average size.

“The head of the Thien-Shan Sheep approaches somewhat in appearance the head of the *O. ammon*, the horns being more massive at the base than the *O. polii*, and not diverging at the points to the

same extent; in fact the second curve is not so decided as in the *O. polii*; but the first curve is much rounder.

"I am therefore inclined to believe that the wild sheep of the Thien-Shan belongs to a species hitherto not described. It certainly is not the *O. ammon* of the Himalayas, as it differs not only in the shape of the horns but also in being of a smaller size, having a longer tail and smaller ears.

"A full description of the Thien-Shan *Ovis* was sent to the Zoological Society with the drawing; but I believe the *O. polii* has never yet been described in the flesh.

"The above opinion is not formed from single specimens, but, directly my attention was called to it, I at once remarked that the characteristic differences held good through all the specimens brought away."

A letter was read from the Rev. S. J. Whitmee, C.M.Z.S., dated Samoa, South Pacific, Nov. 17, 1874, giving particulars as to the occurrence of the Palolo (*Palola viridis*) on the shores of that island in 1874. In that year these singular worms had appeared on Nov. 1st and 2nd, Samoan time, = Oct. 31st and Nov. 1st by Greenwich date. There were very few on the first day; but the supply was large on the second. Mr. Whitmee had removed the ova, which were well developed, and had endeavoured to hatch them in vessels of sea-water regularly changed, but had only been able to keep them alive four days. Drawings of the ova in different stages accompanied the communication. It would appear, therefore, probable that the periodical appearance of the Palolo in such prodigious numbers might have something to do with its reproduction.

Mr. Howard Saunders, F.Z.S., exhibited a specimen of a Gull, which he considered referable to *Larus fuscus*, obtained at Magdalena Bay, Lower California, by Mr. Gervaise Mathew, R.N., of H.M.S. 'Resolute,' in November 1873, being the first instance recorded of the occurrence of this species in the New World, and made the following remarks:—

"In colour of mantle, webs of primaries, feet, and in every respect but one, this specimen appears to be identical with *Larus fuscus*. The sole difference consists in this—that in *L. fuscus* the tarsus is, so far as my experience goes, longer than the foot, including the middle toe-nail; but in this Californian specimen the reverse is the case. This may, of course, be an individual peculiarity; and the example in question is certainly much further off from *L. occidentalis*, Aud., than from true *L. fuscus*. In the coloration of the webs of the primaries it does not agree with *L. occidentalis*, a branch of the group which has *L. argentatus* for type, but perfectly coincides with *L. fuscus*, from which it differs in the size of the foot alone."

The following communications were read:—

1. On the Structure and Affinities of the Musk-Deer (*Moschus moschiferus*, Linn.). By WILLIAM HENRY FLOWER, F.R.S., V.P.Z.S., &c.

[Received March 16, 1875.]

Almost all our knowledge of the visceral anatomy of the Musk-Deer is derived from Pallas*. It is nearly a century since his classical work was published; and it does not appear that any other anatomist has had an opportunity of dissecting an animal of the species, the subject which furnished the material for the following notes having been the first which has ever been brought alive to Europe. Its arrival in the Society's Menagerie was thus announced by our Secretary in the 'Proceedings' for May 13th, 1869:—

"A female Musk (*Moschus moschiferus*), presented by Major F. R. Pollock †, Commissioner at Peshawur, and most carefully conveyed to this country by Lieut. C. H. T. Marshall, F.Z.S., from whom it was received March 31st. This animal had been captured in June 1867, in the hills of Cashmere, by Major Delmé Radcliffe, of the 88th Regiment, who shot both the parents, and brought it when quite a kid to Peshawur. It was now about two years old, and was believed to be the only Musk ever brought to Europe alive."

A very good figure, drawn from the living animal in a characteristic attitude, appeared in the 'Illustrated London News' for April 24th, 1869. I call particular attention to this, as all other published figures of the Musk-Deer appear to have been taken from skins or stuffed specimens, and give but an indifferent idea of the general external appearance of the animal.

It unfortunately died on October 27th of the same year, of pleuropneumonia and acute peritonitis, being then rather more than two and a half years old. All the permanent teeth were in place and the epiphyses of the long bones completely united, though those on the bodies of some of the dorsal vertebræ and on the pelvis were still separable.

The animal measured from the tip of the nose to the root of the tail 33 inches, and (being in an extreme state of emaciation) weighed 14lbs. 8oz.‡

External Characters.

Under this heading I have only thought necessary to record such characters as are not readily observed in mounted skins of the animal, which are now tolerably abundant in museums.

* Spicilegia Zoologica, fasciculus xiii (1779).

† Now Sir Richard Pollock, K.C.S.I.

‡ Since the greater part of the following description was written, a male Pudu (*Cervus humilis*) died at the Society's Gardens; and Mr. Garrod has been so obliging as to forward it for my inspection. I have thus an opportunity of adding some comparisons between the viscera of the Musk and those of another Deer of about the same bulk; for though the former, having longer limbs and neck, has the appearance of being a considerably larger animal, there is but little difference in the size of the trunk.